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Weather Bulletin

New NWR Transmitter on the Air

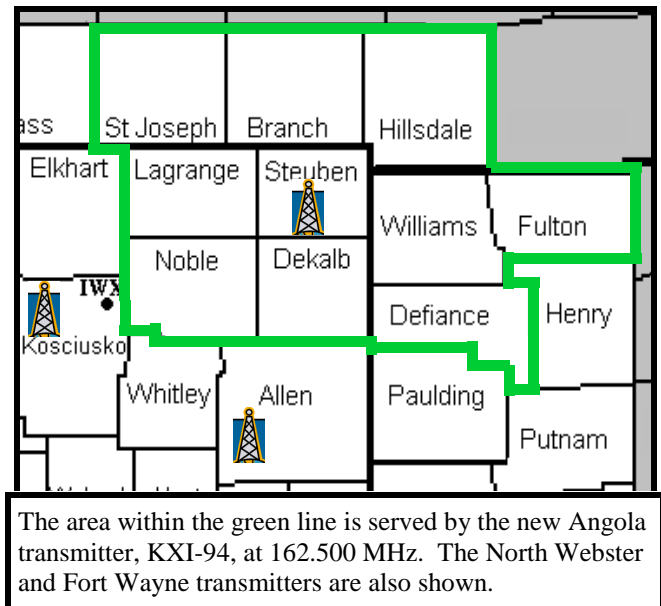
The NOAA Weather Radio (NWR) network of over 560 stations provides reliable reception to about 85 percent of the nation's population. Our goal is to increase availability to 95 percent in each state and territory. Toward this end, a new NWR transmitter has been installed at Angola, Indiana.

Although all counties served by the new Angola transmitter were previously served by other transmitters, reception was poor because of the distance from those transmitters. In many areas tone alerted watches and warnings were unavailable.

Most direct federal funding to expand the NWR network for areas with substandard reception ran out several years ago (see sidebar page two), so the National Weather

Service (NWS) is taking steps to provide additional coverage by implementing a NWR transmitter expansion program through partnerships with local and state organizations. Our partners purchase and

cations Director Ken Lowden and members of the Industrial Guild of Steuben County were key players in raising the necessary funds. The money came from local industry, schools, service



install NWR transmitter systems, then turn over operation and maintenance of the systems to the NWS.

In Angola's case, Steuben County Communi-

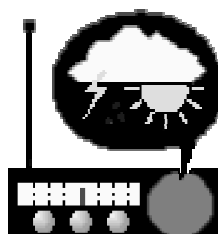
clubs, and private individuals. Local concrete and construction companies donated materials and labor.

The transmitter has 1000 watts of power,

broadcasting at 162.425 MHz, with the call letters KXI-94. The broadcast is unique to this transmitter, providing the tri-state region with the most accurate weather information possible. The tower is located on land donated by Mobex Communica-

tions of Angola. There was an opening ceremony April 20, and the transmitter was brought up to full operating power on May 11. The signal is audible in Fort Wayne, so folks there can check out the conditions in lake country before loading

up the car and heading out on the highway. All parts of the counties covered by the Angola transmitter, as shown on the map on page one, have good to excellent reception of the broadcast, and receive tone alerts for selected watches and warnings.



NWR Voice Improvement

The NWS has initiated an automated voice improvement program for NWR. The current voice, while passable, admittedly does leave a lot to be desired. While public comments on the current voice have not been wholly negative, a new and improved voice will still be welcome.

Currently, the voice you hear on NWR is a computer voice. A product, such as a forecast, is sent to NWR and the computer translates the written words

into spoken language, without any human intervention.

When the voice improvement program is completed, however, the NWR broadcast will use an actual human voice that has been pre-recorded. It is hoped that using a human voice will make the broadcast not only easier to understand, but also more pleasant to listen to.

The NWS is auditioning several different people's voices. Sample audio files of these

voices can be found at <http://www.nws.noaa.gov/nwr/voicesamples.htm>. If you visit the site, be sure to let us know what you think! The NWS values our customers' opinions, and we want to use the best voice possible.

Also, you may periodically wish to visit <http://www.nws.noaa.gov/nwr/VIPstatus.htm> to check up on the status of our search for a new voice of the National Weather Service.

NWR broadcasts began in the 1950s when the NWS started airing aviation weather over two stations. In the '60s, stations were added for the marine community, and by the late '70s, the system included more than 300 stations.

Federal NWR Funding

The Rural Utilities Service (RUS), as part of the United States Department of Agriculture, is a Federal credit agency that provides lending and technical guidance for rural regions. It assists rural infrastructure in areas such as electricity, water, and telecommunications.

This spring the RUS announced a new grant program for funding new NOAA Weather Radio (NWR) transmitters in outlying areas that are currently under-served by NWR. Five million dollars in grant funds were made available.

Applications for the funds will be processed on a first-come first-served basis until the money runs out.

In our area, Rochester, Indiana, and Findlay, Ohio, are listed as sites where RUS funds may be available.

For more information:

<http://www.usda.gov/rus/telecom/initiatives/noaa/weatherradio.htm>

NWR for the Hearing-Impaired

Recent technological advancements have made it possible for hearing-impaired citizens to receive NWR information in their homes with ease and convenience. The new radio provides deaf and hard-of-hearing people the same around-the-clock, up-to-the-minute weather information that is obtainable by

hearing persons.

Visual alerts, such as strobe lights; physical alerts, such as pillow vibrators and bed shakers; and text print-outs are all available. Technology currently under development will allow the hearing impaired to connect their weather radio to a computer or printer and have the broadcast translated

into text. Someday it may be possible to translate the NWR broadcast into Braille for people who are both hearing- and sight-impaired.

For more information, including special-needs NWR vendors, visit <http://www.nssl.noaa.gov/~wood/NWR/spc-nds-nwr.html>.



Lake Boating Safety

Calm winds and waters make for enjoyable power boating, water-skiing, and fishing. A fresh breeze with a light chop are suitable for sailing and wind surfing. However, the sudden approach of a storm can turn a pleasant outing into a terrifying matter of life and death. Stay safe while you're on the water this summer.

Several days before your outing consult the Northern Indiana National Weather Service's extended forecast via NOAA Weather Radio or the Internet. Be sure to use the forecast for the

county to which you're planning to travel (see pages 5-11). The extended forecast will give you a general sense of what weather is to be expected.

On the day of the activities, pay close attention to the forecast. If you'll be on Lake Michigan, listen for statements, advisories, or warnings that might be in effect.

Once you're on the water, stay tuned to NOAA Weather Radio! The radio is your best defense against approaching weather.

If a thunderstorm is gathering, get to shore

immediately. Leave your boat and evacuate the water and nearby shore (lightning can strike the water and travel to shore).

If you get caught on open water, be sure you have your personal floatation device on. Keep away from metal objects that are not grounded to the boat's protection system. Don't touch more than one grounded object simultaneously (you may become a conduit for electricity passing through the protection system).

The National Weather Service publishes Marine Weather Service

Astronomical summer begins at 2:38 a.m.

Indiana time June 21, and ends at 12:26 p.m.

Indiana time September 22. Meteorologically speaking, the summer season runs from June 1 to August 31.

J. Edward Roush Lake, in Huntington and Wells counties, normally has 900 acres of water in the summertime. It controls runoff from a drainage area of 707 square miles. The dam creating the lake was built from 1969 to 1971.

Mississinewa Reservoir, in Miami, Wabash, and Grant counties, normally has 3200 acres of water in the summertime. It controls runoff from a drainage area of 809 square miles.

Charts for U.S. coastlines.
The charts are available by
sending \$1.25 to:

**National Ocean Service
Distribution Division
N/ACC33
Riverside, MD 20737-1199**

Or, you may call (301) 436-8301. For the Great Lakes, ask for chart MSC-11/12.

In addition, the charts are available on-line at <http://www.nws.noaa.gov/om/marine/pub.htm>.

Marine safety and informational brochures can be seen on-line at <http://www.nws.noaa.gov/om/brochures.htm>.

National Weather Service Marine Terms

Small Craft Advisory — Observed or forecast winds of 18 to 33 knots, issued up to 12 hours in advance.

Gale Warning — Observed or forecast winds of 34 to 47 knots.

Storm Warning — Observed or forecast winds of 48 knots or more.

Special Marine Warning — Observed or forecast winds of 34 knots or more, associated with a thunderstorm, expected to last for less than 2 hours.

Open Lakes Forecast — Issued around 4 am/pm and 10am/pm Chicago time. Detailed information for the first 48 hours, and an extended outlook through five days, for beyond 5 nautical miles of shore.

Great Lakes Nearshore Forecast — Issued around 4 am/pm and 10am/pm Chicago time. Valid for the following 36 hours, within 5 nautical miles of shore.

Marine Schedule on NOAA Weather Radio for Lake Michigan and Lake Erie

WXJ-57, South Bend

(southern Lake Michigan only)

Open Lakes Forecast

Year-round

Great Lakes Nearshore Forecast

During DST.

Coast Guard Observations

Observations from Saint Joseph, Michigan City, and Calumet Harbor are given (when available) April 1 to September 30.

Statements, Advisories, and Warnings

As needed, year-round

WXJ-58, Fort Wayne

WXM-98, Marion

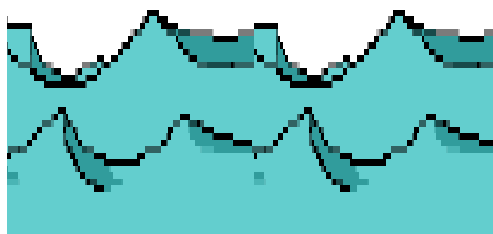
WWG-45, North Webster

KXI-94, Angola

(southern Lake Michigan and western Lake Erie only)

Open Lakes Forecast

April 1 to September 30.



Salamonie Reservoir, in Huntington and Wabash counties, was completed in 1966. It has 2700 acres of water in the summertime. The dam creating the lake cost \$16 million to build, and is estimated to have saved \$161 million in flood damage.

Bresler, Ferguson, Lima, Lost Creek, and Metzger reservoirs in Allen County, Ohio, combine to total 1283 acres of surface water.



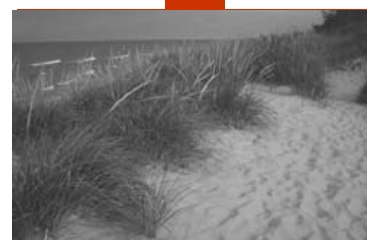
Harrison Lake near Fayette, Ohio in Fulton County. The lake was created in 1941 when Mill Creek was dammed.



Lake Listing



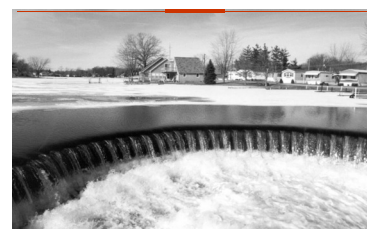
Adams	Hillsdale	Belas	Cass, MI	Brush	Berrien
Adams	Lagrange	Bell	Steuben	Bryant	St Jsh MI
Adams	St Jsh MI	Bellows	Cass, MI	Buck	Cass, MI
Aldrich	St Jsh MI	Berry	Hillsdale	Buck	Hillsdale
Allen	Cass, MI	Best	Berrien	Buck	Lagrange
Allen	Hillsdale	Big	Defiance	Buck	Steuben
Allen	Kosciusko	Big	Noble	Bull	Wabash
Ames	Hillsdale	Big Barbee	Kosciusko	Bullhead	Hillsdale
Anderson	Branch	Big Bower	Steuben	Bullhead	St Jsh MI
Anderson	Fulton IN	Big Chapman	Kosciusko	Bunker	Cass, MI
Appleman	Lagrange	Big Long	Lagrange	Burdick	DeKalb
Archer	Branch	Big Mosherville	Hillsdale	Cable	Cass, MI
Arrowhead	Steuben	Big Turkey	Lagrange/ Steuben	Cade	St Jsh MI
Atwood	Lagrange	Big Wells	Branch	Caldwell	Kosciusko
Ayers	St Jsh MI	Bingham	Branch	Calhoon	Branch
Backwater	Kosciusko	Birch	Cass, MI	Cambria	Hillsdale
Bair	Cass, MI	Bird	Hillsdale	Camp	Branch
Baker	St Jsh MI	Bixler	Noble	Carpenter	Hillsdale
Baldwins	Cass, MI	Black	Berrien	Carr	Kosciusko
Ball	Steuben	Black	Steuben	Carters	Cass, MI
Bankers	Hillsdale	Blackhawk	Branch	Cartright	Hillsdale
Barber	Hillsdale	Blackman	Lagrange	Cary	Branch
Barnhart	Berrien	Blood	Hillsdale	Cass	Lagrange
Barr	Fulton, IN	Blossom	Branch	Catfish	St Jsph IN
Barrel and a Half	Kosciusko	Blue	Whitley	Cedar	DeKalb
Barron	Cass, MI	Bobby Allen	Hillsdale	Cedar	Lagrange
Bartholomew	Branch	Bogart	Cass, MI	Cedar	Steuben
Bartley	Noble	Boot	Berrien	Cedar	Whitley
Bass	Starke	Boot	Hillsdale	Cedarville	Allen, IN
Bass	Steuben	Boot	St Jsh MI	Cemetery	Branch
Baugo	St Jsph IN	Bowen	Fulton IN	Cemetery	Steuben
Baw Beese	Hillsdale	Boyle	Berrien	Center	Kosciusko
Bear	Hillsdale	Braxee	Hillsdale	Center	Steuben
Bear	Noble	Bresler	Allen, OH	Chain	Cass, MI
Bear Wabash	Wabash	Bricker	Branch	Chamberlain	St Jsph IN
Beaver	St Jsh MI	Bristol	Noble	Chapin	Berrien
Beaver Dam	Kosciusko	Broom	Hillsdale	Chapin	St Jsh MI
Beaverdam	Steuben	Browns	Branch	Charles	Steuben
Beckwith	Branch	Bruce	Fulton IN/ Pulaski	Cheeseboro	Steuben
Bel-Air	Hillsdale			Chester	Branch



Sand dunes along Lake Michigan near Tower Hill Shorelands, Michigan, in Berrien County.



Wetlands at Worster Lake, near North Liberty, Indiana in Saint Joseph County.



Fish Creek at Hamilton Lake, near Hamilton, Indiana in Steuben County.



Lake Listing, continued...



Christi	Defiance	Cub	Hillsdale	Eagle	Noble
Christiana	Cass, MI	Curtis	Berrien	Eagle	Starke
Cicott	Cass, IN	Curtis	Cass, MI	East	Elkhart
City	Van Wert	Dallas	Lagrange	East	Lagrange
Clair	Huntngton	Dane	Branch	East Long	Branch
Clarks	Berrien	Dark	St Jsh MI	Eaton	Steuben
Clear	Berrien	Davis	Cass, MI	Eberhard	St Jsh MI
Clear	LaPorte	Day	Cass, MI	Eddy	Marshall
Clear	St Jsh MI	Dayton	Berrien	Eight Foot	St Jsh MI
Clear	Steuben	Dean	Branch	Elbow	Cass, MI
Cline	Lagrange	Deep	Noble	Elizabeth	St Jsph IN
Clish	Steuben	Deep	Steuben	Emma	Lagrange
Cobb	Hillsdale	Deer	Hillsdale	Engle	Noble
Coberts	Cass, MI	Deer	Noble	Evans	St Jsh MI
Coldwater	Branch	Deer	St Jsph IN	Eve	Lagrange
Collin's	Fulton IN	Delta	Fulton OH	Everett	Allen, IN
Colvin	Berrien	DePew	DeKalb	Farrand	St Jsh MI
Cook	Cass, MI	Deuely	Noble	Ferguson	Allen, OH
Cook	Marshall	Devil	Pulaski	Finch	Cass, MI
Cooks	Branch	Devoe	Hillsdale	Finger	LaPorte
Coplen's	Fulton IN	Dewart	Kosciusko	First	Branch
Copley	Cass, MI	Dewey	Cass, MI	First	Hillsdale
Corey	St Jsh MI	Diamond	Cass, MI	Fish	Branch
Cotherman	St Jsh MI	Diamond	Kosciusko	Fish	Cass, MI
Cotton	Lagrange	Diamond	Noble	Fish	Elkhart
Coveney	Berrien	Diane	Hillsdale	Fish	Kosciusko
Coverdale	Cass MI	Dibble	Cass MI	Fish	Lagrange
Covington	Allen IN	Dixon	Marshall	Fish	Lagrange/ Saint Joseph, MI
Craig	Branch	Dock	Elkhart	Fish	St Jsh MI
Cranberry	Cass, MI	Dollar	St Jsph IN	Fish	Steuben
Crane	LaPorte	Donnell	Cass, MI	Fishers	St Jsh MI
Crane	Noble	Dorsey	Branch	Fishtrap	LaPorte
Cree	Noble	Dragon	Branch	Fites	St Jsph IN
Crocket	Steuben	Dream	Kosciusko	Flat	Marshall
Crooked	Cass, MI	Driskels	Cass, MI	Fletcher	Fulton, IN
Crooked	Noble/ Whitley	Duck	Hillsdale	Forest	Grant
Crooked	Steuben	Duck	Noble	Forked	Cass, MI
Crystal	Hillsdale	Duncan	Branch	Four	St Jsh MI
Crystal	Kosciusko	Dunton	DeKalb	Fourth	Hillsdale
		Eagle	Cass, MI		

Lake Michigan Facts

Third largest Great Lake by surface area and second largest by volume.

Sixth largest freshwater lake in the world.

Small lunar tidal effects have been documented.

The world's largest freshwater sand dunes are found along its shore.

307 miles long by 118 miles wide.

Averages 279 feet deep, with a maximum depth of 925 feet.

Contains 1,180 cubic miles of water.

Surface area totals 22,300 square miles.

Drainage basin area is 45,600 square miles.

1,638 miles of shore.

Cold air flowing over relatively warm lake waters can cause bands of lake effect snow.

These bands may drop heavy snow in localized areas, and sometimes extend well over a hundred miles inland.



Lake Listing, continued...



Fox	Branch	Hamilton	Steuben	Hunter	Elkhart
Fox	Cass, MI	Hammond	Kosciusko	Huray	Branch
Fox	Steuben	Hanchet	Branch	Hurstown	Allen, IN
Freeman	White	Hardys	St Jsh IN	Hutchins	Cass, MI
Fulton	Fulton OH	Harris	Berrien	Huyck	Branch
Gaerte	Miami	Harrison	Fulton OH	Huyck	Cass, MI
Gage	Steuben	Harwood	Cass, MI	Indian	Berrien
Garver	Cass, MI	Hastings	Hillsdale	Indian	Cass, MI
Geer	Cass, MI	Havens	St Jsh MI	Indian	DeKalb
George	Branch, Steuben	Hawk	Marshall	Indiana	Cass, MI/ Elkhart
George	Cass MI	Hawkins	St Jsh MI	Irish	Kosciusko
Gilber	Marshall	Haynes	DeKalb	Jacobs Chapel	Berrien
Gilbert	Noble	Heaton	Elkhart	James	Kosciusko
Gilead	Branch	Hemlock	Cass, MI	James	Steuben
Gilmore	St Jsh MI	Hemlock	Hillsdale	Jarvis	Berrien
Girard	Branch	Henderson	Noble	J Edward Roush	Huntington
Goff	Cass, MI	Henry	Steuben	Jimmerson	Steuben
Golden	Steuben	Heron	Kosciusko	Johnson	Steuben
Goodman	St Jsh IN	Hess	Berrien	Jones	Cass, IN
Goodrich	Branch	Hibbard	Berrien	Jones	Noble
Goose	Cass, MI	High	Noble	Judy	Berrien
Goose	Hillsdale	Hill	Kosciusko	Juno	Cass, MI
Goose	Kosciusko	Hindman	Noble	Kaiser	St Jsh MI
Goose	St Jsh MI	Hodunk	Branch	Kale	St Jsh IN
Goose	Whitley	Hoffman	Kosciusko	Keister	Noble
Goose Neck	Steuben	Hoffman	St Jsh MI	Kelsey	Cass, MI
Grabemeyer	Cass, MI	Hog	Hillsdale	Kenyon	Branch
Grand Mere	Berrien	Hog	Steuben	Kibler	Berrien
Grass	Hillsdale	Hogback	Cass MI	King	Hillsdale
Grass	Lagrange	Hogback	Steuben	Kings	Fulton IN
Grass	St Jsh MI	Holden	Whitley	Kirk	Cass, MI
Grass	Steuben	Holen	Marshall	Klinger	St Jsh MI
Gray	Cass, MI	Holiday	DeKalb	Knapp	Noble
Gray	Hillsdale	Honey	Branch	Koontz	Marshall/ Starke
Green	Lagrange/ Steuben	Horseshoe	LaPorte	Kreigbaum	Marshall
Green	Steuben	Horseshoe	Noble	Kuhn	Kosciusko
Grey	St Jsh MI	Houghton	Marshall	L	Fulton IN
Hackenburg	Lagrange	Howard	Steuben	Lacore	Hillsdale
Half Moon	Hillsdale	Hubbard	Branch	Ladd	Defiance
		Hudson	LaPorte		
		Hunt	LaPorte		



This buoy is located in southern Lake Michigan east of Milwaukee. It records wind direction, wind speed, wind gusts, atmospheric pressure, pressure tendency, air temperature, and water temperature. The data is available at http://www.ndbc.noaa.gov/station_page.phtml?Station=45007



National Ice Center

All NIC regional Great Lakes ice analyses are derived from near real-time integration of remotely sensed and in-situ meteorological observations. Visit the NIC at <http://www.natice.noaa.gov/>.

Lake Listing, continued...

Lafferty	Cass, MI	Little Fish	Cass, MI	Marion	Grant
La Grange	Cass, MI	Little Hartz	Fulton IN	Marl	Branch
Lk of the Woods	Branch	Little Indian	Berrien	Marl	Noble
Lk of the Woods	Lagrange/ Steuben	Little Long	Branch	Marl	St Jsh MI
Lk of the Woods	Marshall	Little Long	Noble	Marsh	Hillsdale
Lancaster	St Jsph IN	Little Paw Paw	Berrien	Marsh	Steuben
Langenbahn	Pulaski/ Starke	Little Pleasant	St Jsh MI	Matteson	Branch
Laniger	Cass MI	Little Rose	Branch	Maxinkuckee	Marshall
La Su An	Williams	Little Turkey	Lagrange	McClures	Kosciusko
Latonka	Marshall	Little Turkey	Steuben	McGolley	Wabash
Latta	Noble	Little Wells	Branch	Mead	Hillsdale
Lavine	Branch	Little Wood	Cass, MI	Mercer	Hillsdale
Lawrence	Marshall	Lombard	Hillsdale	Merry	Hillsdale
Le Ann	Hillsdale	Long	Allen, OH	Messick	Lagrange
Leatherberry	Branch	Long	Branch	Metzger	Allen, OH
Lee	St Jsh MI	Long	Cass, MI	Michiana	Branch, Steuben
Lehr	Branch	Long	Hillsdale	Michigan	Berrien, LaPorte
Leidy	St Jsh MI	Long	Hillsdale/ Steuben	Middle	Branch
Leninger	Cass, MI	Long	St Jsh MI	Middle Sand	Hillsdale
Lepley	St Jsh MI	Long	Steuben	Mill	Cass, MI
Lewis	Cass, MI	Long	Wabash	Mill	Fulton IN
Lewis	Cass, MI/ Saint Joseph, MI	Long Noble	Branch	Mill	Hillsdale
Lilly	Cass, MI	Loon	Hillsdale	Mill	Marshall
Lily	LaPorte	Loon	Kosciusko	Mill	St Jsh MI
Lima	Allen, OH	Loon	Noble/ Whitley	Miller	Branch
Lime	Branch	Loon	Steuben	Miller	Cass, MI
Lime	Cass, MI	Lost	Fulton IN	Miller	Noble
Lime	Hillsdale	Lost Creek	Allen, OH	Mills	Berrien
Lime	Steuben	Lower	LaPorte	Minifenokey	Steuben
Lime Kiln	Steuben	Lower Fish	LaPorte	Minnewaukan	St Jsh MI
Lindsey	Noble	Lower Long	Noble	Mirror	Allen IN
Lintz	DeKalb	Lower Story	DeKalb	Miserva	Steuben
Little	Defiance	Lukens	Wabash	Mississinewa	Miami/ Wabash
Little Barbee	Kosciusko	Madron	Berrien	Mohney	St Jsh MI
Little Bower	Steuben	Magician	Cass, MI	Monroe	Branch
Little Chapman	Kosciusko	Mallory	Hillsdale	Moon	Berrien
Little Coldwater	Branch	Mallow	Branch	Moon	Hillsdale
Little Crooked	Cass, MI	Manitou	Fulton, IN	Moon	St Jsph IN
		Marble	Branch		



Ships on the lakes participate in the Voluntary Observing Ship Program. The ships that participate take observations every 3 hours and some of the elements they record include temperature, pressure, wind speed and direction, and wave height.

For more information:
<http://www.pmo.noaa.gov/>

The *Mariners Weather Log*, a publication of the National Weather Service, contains articles, news, and information about marine weather events and phenomena, storms at sea, weather forecasting, the NWS Voluntary Observing Ship (VOS) Program, Port Meteorological Officers (PMOs), cooperating ships officers, and their vessels. See <http://www.nws.noaa.gov/om/mwl/mwl.htm>.



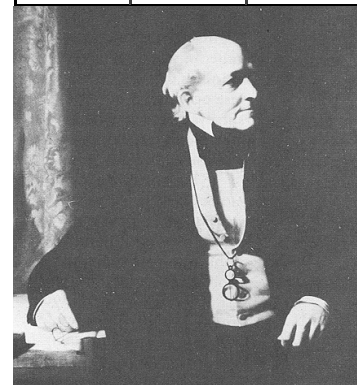
Lake Listing, continued...



Morrison	Branch	Olney	Branch	Pleasant	St Jsh MI
Moser	Wells	Omena	St Jsh MI	Pleasant	Steuben
Mount Zion	Fulton, IN	Ontario	Lagrange	Plothrow	Miami
Mud	Berrien	Otter	Cass, MI	Plumb	St Jsh MI
Mud	Branch	Otter	Steuben	Popple	Hillsdale
Mud	Branch/ Saint Joseph, MI	Oxbow	Defiance	Pork Barrel	Branch
Mud	Cass, MI	Painter	Cass, MI	Portage	St Jsh MI
Mud	Fulton IN	Palestine	Kosciusko	Pottawattamie	LaPorte
Mud	Hillsdale	Palmer	St Jsh MI	Prairie River	St Jsh MI
Mud	Lagrange	Palmitere	Branch	Pretty	Lagrange
Mud	St Jsph IN	Papakeechie	Kosciusko	Pretty	Marshall
Mud	St Jsh MI	Paradise	Cass, MI	Priest	Cass, MI
Mud	Steuben	Paulding	Paulding	Puterbaugh	Cass, MI
Mud	Williams	Paw Paw	Berrien	Quaker	Branch
Mudd	Cass, MI	Paw Paw	Hillsdale	Rainbow	Adams
Mulford	Cass, MI	Perch	Hillsdale	Rainbow	Lagrange
Mullen	Cass, MI	Perch	Steuben	Randall	Branch
Murphy	Berrien	Perfect	Steuben	Rebeck	Hillsdale
Muskellunge	Kosciusko	Perrin	St Jsh MI	Redwater	Branch
Myers	Marshall	Pickerel	Cass MI	Reed	Steuben
Nauvoo	Lagrange	Pickerel	St Jsh MI	Reese	Hillsdale
Nettle	Williams	Pigeon	Lagrange	Rhodes	Steuben
Noah	St Jsh MI	Pigeon	Steuben	Riddles	St Jsph IN
Norris	Berrien	Pike	Berrien	Ridinger	Kosciusko
North	Branch	Pike	Hillsdale	Riggins	Berrien
North Chain	St Jsph IN	Pike	Kosciusko	River	Branch
North Elbow	Cass, MI	Pine	Berrien	Robbins	Cass, MI
North Pleasant	Branch	Pine	Cass, MI	Robinson	Cass, MI
North Sand	Hillsdale	Pine	LaPorte	Robinson	Kosciusko
North Twin	Lagrange	Pine Canyon	Steuben		/Whitley
Number Five	Hillsdale	Pinhook	St Jsph IN	Rock	Fulton IN/ Kosciusko
Number One	Hillsdale	Pipestone	Berrien	Rodgers	Cass MI
Number Two	Hillsdale	Pit	Steuben	Roger	Branch
Nyona	Fulton, IN	Pitcher	Cass, MI	Rothenbeger	Kosciusko
O'Blennis	Fulton IN	Pittsford	Hillsdale	Round	Berrien
O'Brien	Berrien	Pleasant	Cass MI	Round	Branch
O'Brien	Fulton IN	Pleasant	Branch/ Steuben	Round	Cass, MI
Olin	Lagrange	Pleasant	Cass MI	Round	Hillsdale
Oliver	Lagrange	Pleasant	Hillsdale	Round	Noble
Oliverda	Branch	Pleasant	Noble	Round	Steuben

Beaufort Scale

Force	Speed (kt)	Desc.
0	0	Calm
1	1—3	Light air
2	4—6	Light breeze
3	7—10	Gentle breeze
4	11—16	Moderate breeze
5	17—21	Fresh breeze
6	22—27	Strong breeze
7	28—33	Near gale
8	34—40	Gale
9	41—47	Strong gale
10	48—55	Storm
11	56—63	Violent storm
12	> 64	Hurricane



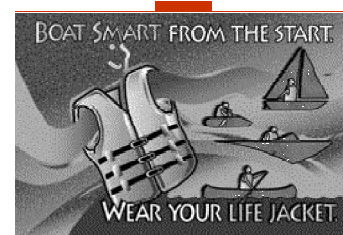
Admiral, Sir Francis Beaufort



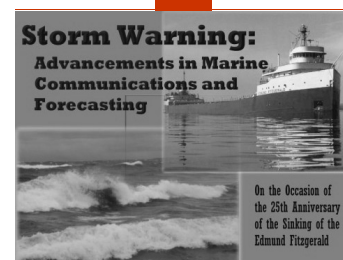
Lake Listing, continued...



Round	Wabash	Sixteen	Fulton IN	Summit	Noble
Round	Whitley	Skinner	Noble	Swede	LaPorte
Rowe	Berrien	Skyhawk	Cass, MI	Sweet	St Jsh MI
Royer	Branch	Slab	Cass, MI	Sylvan	Noble
Royer	Lagrange	Sloan	Lagrange	Syl-van	Steuben
Rug	Berrien	Smalley	Noble	Syracuse	Kosciusko
Ruples	St Jsph IN	Smith	Berrien	Tamarack	Noble
Saddlebag	Cass, MI	Smith	Cass MI	Tamarack	St Jsh MI
Saint Josephs	St Jsph IN	Smith	Miami	Tamarack	Steuben
Saint Marys	St Jsph IN	Snow	Steuben	Taylor	Lagrange
Salamonie	Hunting-	Somerset	Hillsdale	Teesdale	Cass, MI
	ton/ Wabash	Sousley	St Jsph IN	Templene	St Jsh MI
Sally Owen	Steuben	South	Branch	Terry	DeKalb
Sand	Noble	South Chain	St Jsph IN	Tharp	Cass, MI
Sand	St Jsh MI	South Clear	Berrien/	Third	Hillsdale
Saugany	LaPorte		Saint Joseph IN	Thomas	Marshall
Sawyer	Noble	South Mud	Fulton, IN	Thompson	St Jsh MI
Schael	Fulton IN	South Sand	Hillsdale	Tippecanoe	Kosciusko
Sechrist	Kosciusko	South Twin	Lagrange	Town	Fulton IN
Second	Hillsdale	Sparta	Noble	Troy Cedar	Whitley
Sellers	Kosciusko	Spatterdock	Cass, MI	Turner	Hillsdale
Seneca	Williams	Spear	Kosciusko	Twin	Cass, MI
Seven Sisters	Steuben	Spencer	Hillsdale	Twin	Hillsdale
Shady	Berrien	Spicer	St Jsph IN	Twin	St Jsph IN
Shafer	White	Spiker	Wells	Union	Branch
Shakey	Fulton IN	Spring	Cass MI	Upper Basin	Steuben
Shallow	Steuben	Sprong	Branch	Upper Fish	LaPorte
Shavehead	Cass, MI	Stag	St Jsh MI	Upper Long	Noble
Sherburn	Kosciusko	Stage	Cass, MI	Upper Story	DeKalb
Sherwood	Berrien	Steinbarger	Noble	Upper Summit	Fulton IN
Shipshewana	Lagrange	Steinbauer	Berrien	Viberg	Allen IN
Shoaff	Allen IN	Stewart	St Jsh MI	Village	Noble
Shock	Kosciusko	Still	Lagrange	Vincent	Branch
Shoe	Kosciusko	Stinson	Fulton IN	Vogelbacher	Steuben
Shriner	Whitley	Stone	Cass, MI	Wabee	Kosciusko
Silver	Branch	Stone	Lagrange	Wagner	Berrien
Silver	Kosciusko	Stone	LaPorte	Wahbememe	St Jsh MI
Silver	LaPorte	Story	DeKalb	Waldron	Noble
Silver	Steuben	Streaters	Cass, MI	Wall	Lagrange
Simonton	Elkhart	Sturgeon	St Jsh MI	Walters	Steuben
Singer	Berrien	Suckey	Hillsdale	Warner	Steuben



Access to just about any Great Lakes marine and weather information you could possibly want, at the National Weather Service's Marine Product Dissemination Information page: <http://www.nws.noaa.gov/om/marine/home.htm>.



As a tribute to the ill-fated Great Lakes ship *Edmund Fitzgerald*, on the twenty-fifth anniversary of its sinking, the National Weather Service in Marquette, Michigan, prepared a discussion of how marine weather forecasting and communications have improved over the past quarter century. Read about it at <http://www.crh.noaa.gov/mqt/fitzgerald/index.htm>.



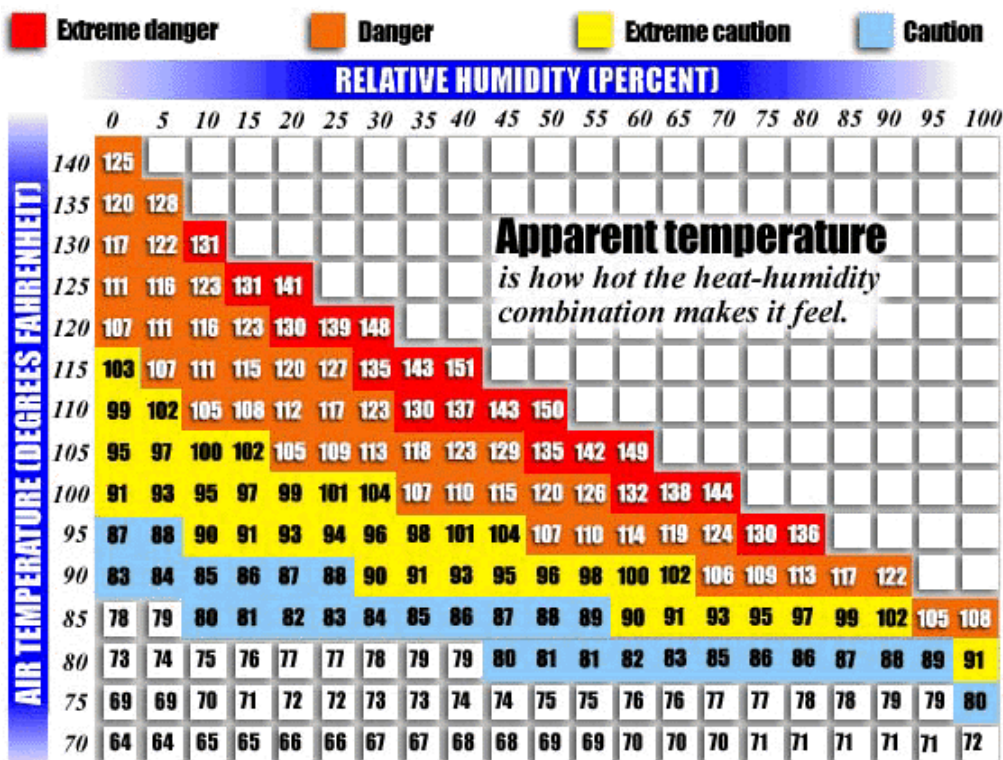
Lake Listing, continued...



Washburn	St Jsh MI	Wildcat	Cass, MI	Wolf	Noble
Waubee	Kosciusko	Willet	Hillsdale	Wood	Cass, MI
Wauseon	Fulton OH	Willetts	Kosciusko	Worster	St Jsph IN
Wawasee	Kosciusko	Williams	Noble	Wright	Branch
Weaver	Berrien	Williams	St Jsh MI	Yellow	Berrien
Webster	Kosciusko	Wilson	Hillsdale	Yellow Creek	Elkhart
Westler	Lagrange	Winona	Kosciusko	Yellow Creek	Kosciusko
West Long	Branch	Withington	Branch	Yellow Creek	Putnam
West Otter	Steuben	Witmer	Lagrange	Zink	Fulton IN
White	Allen IN	Witt	St Jsh MI		
Wier	Lagrange	Wolf	Elkhart		

Heat Safety

From 1936 through 1975 a total of nearly twenty thousand people died from excessive heat. To better communicate the effects of heat and humidity on the human body, the NWS calculates a “heat index”. Heat index is given in degrees Fahrenheit and is used to describe how air actually feels to a person, when temperature is combined with the amount of humidity in the air. In the table below, find the current temperature on the left side and the current relative humidity on the top. The value in the grid box where the temperature row intersects with the humidity column is the current heat index.



Sunburn

Symptoms: Redness and pain. Swelling of skin, blisters, fever, and headaches.

First Aid: Ointments or a dry sterile dressing. Severe cases should be seen by physician.

Heat Cramps

Symptoms: Painful spasms of muscles, heavy sweating.

First Aid: Firm pressure on muscles, or gentle massage. Give sips of water. If nausea occurs, discontinue use.

Heat Exhaustion

Symptoms: Heavy sweating, weakness, skin cold, pale, and clammy. Thready pulse. Fainting and vomiting.

First Aid: Lay down indoors and loosen clothing. Apply cool wet cloth. Give sips of water, unless nausea occurs. If vomiting continues, seek medical attention.

Heat Stroke

Symptoms: At least 106° body temperature. Hot dry skin. Rapid strong pulse. Possible unconsciousness.

First Aid: Summon emergency medical assistance quickly. Move to a cooler environment and reduce body temperature with a cool bath. Do not give fluids.

Flood Stage Changes

The following flood stage changes will take effect July 1, 2001:

The flood stage on the Tippecanoe River at Ora, Indiana, will be raised from 10 feet to 12 feet.

The flood stage on the Tippecanoe River at Winamac, Indiana, will be raised from 12 feet to 13 feet.

The flood stage on the Yellow River at Plymouth, Indiana, will be raised from 12 feet to 13 feet.

Following site surveys conducted during a high water event in February 2001, the National Weather Service determined that these flood stages are more indicative of the level at which damaging flooding begins.

Questions regarding these flood stage changes may be directed to the Northern Indiana National Weather Service Office's Service Hydrologist, Greg Lamberty, at 219-834-1104 x493.

Ora, Indiana

At 12.5 feet...flooding begins to affect residential areas.

At 13 feet...half of Winamac Park is flooded, including park buildings.

At 14 feet...low lying rural areas are flooded extensively.
Record flood: 15.2 feet August 20, 1990.

Winamac, Indiana

At 13 feet...houses and lots on the east side of Winamac are flooded...especially near the IN 14 bridge. Some evacuations necessary. Winamac park and campground are flooded. Klecker Park near Monterey is flooded. Mobile home community near Delong flooded.

Record flood: 15.4 feet January 4, 1985, and February 20, 1985.

Plymouth, Indiana

At 13 feet...Flooding begins along Plum, Fletcher, Walnut, Gilmore, Douglas, and LaPorte streets.

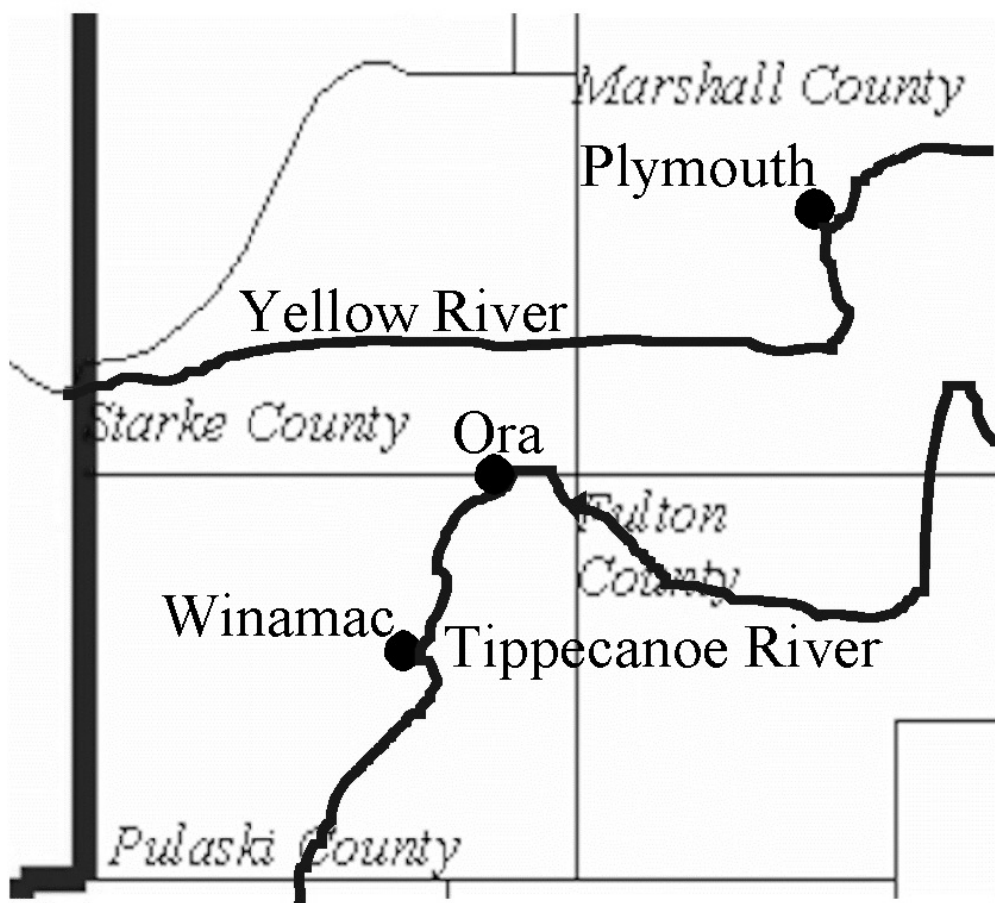
At 13.5 feet...Cleveland, Gill, Adams, and Schuyler streets flood. Parking lot near Jefferson Street bridge floods.

At 14 feet...Mobile home community near Jefferson Street bridge floods.

At 14.5 feet...Garro and River streets flood. NIPSCO parking lot floods.

At 16 feet...high school campus and Centennial Park flood. Water up to 3 feet deep in south and east parts of town.

At 17 feet...evacuations necessary in northeast, east, and south parts of town. Floodwaters up to four feet deep. Plymouth substation flooded.
Record flood: 17.1 feet October 12, 1954.





The EMWIN set-up at
NWS Northern Indiana



The EMWIN satellite dish

Good-bye, Jane!

At the end of April the staff at NWS Northern Indiana said good-bye to Jane Hollingsworth as she left to become the Meteorologist-in-Charge at the Reno, Nevada NWS office.

Jane was an excellent Warning Coordination Meteorologist while here at Northern Indiana, and she will be missed.

We wish her the best in Reno!

EMWIN Installed and Running at NWS Northern Indiana

The Emergency Managers Weather Information Network (EMWIN) was installed during the winter months and is now operational at the NWS office in Northern Indiana (KIWX). The EMWIN system is located at the Amateur Radio Skywarn desk, and will be used jointly by NWS staff and Skywarn amateur radio operators (HAMs).

The EMWIN system at KIWX is composed of a 3 foot diameter satellite dish with a feedhorn and low noise amplifier. The dish is mounted on a radio tower, 10 feet above the ground, and pointed at the GOES 10 satellite off the west coast of the United States. A desktop personal computer is located inside the KIWX office with an EMWIN power supply and signal monitoring box. The satellite dish and PC are connected by RG-6 coaxial cable and a second low noise amplifier.

EMWIN is used by the KIWX staff to monitor local products that are issued, to make sure they are received from the satellite after being transmitted. This is especially important during the convective sea-

son when warnings must reach their destinations quickly. By monitoring EMWIN, the staff can quickly identify that a warning made its way out of the office, to the satellite, and back to earth. Warnings have the highest priority of all NWS products, and generally alarm in EMWIN in less than 20 seconds after issuance from the NWS field office.

A secondary function of EMWIN is for the aid of Skywarn amateur radio operators during severe weather. The location of EMWIN next to the HAMs allows them access to all products issued by the Northern Indiana office, as well as products issued by surrounding offices and the Storm Prediction Center. This keeps the HAMs well informed of severe weather in and around northern Indiana, southern Michigan, and northwest Ohio. Software on the EMWIN computer will also allow a map of the county warning area to be displayed with individual counties highlighted when warnings are in effect. Radio operators can select a highlighted county and

get a text copy of the warning to read over the radio. Satellite, radar, surface observations, and other graphical images will also be available through EMWIN. All of this information can be relayed through Skywarn amateur radio to severe weather spotters in the field.

A final function of the EMWIN system at KIWX is for demonstration and test purposes. Emergency Managers, school administrators, town officials, and anyone involved with public safety are welcome to view the EMWIN system and/or ask any questions on its use, setup, cost, etc. Sam Lashley (Sam. Lashley@noaa.gov) is the local EMWIN focal point and welcomes any questions or comments on EMWIN hardware or software issues. You can also contact Sam if you would like to view the EMWIN setup at the Northern Indiana Office.

More information on EMWIN can be found at <http://www.crh.noaa.gov/emwin/> or http://www.crh.noaa.gov/iwx/program_areas/EMWIN/emwin.html